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IS 4066 (1967): Metal Hooks, Clips and Eyes [PGD 14:
Consumer Products and Allied Equipments]

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Indian Standard
SPECIFICATION FOR
METAL HOOKS, CLIPS AND EYES

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MANAK BHAVAN, 9 BAHADUR SHAH ZAFAR MARG
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SPECIFICATION FOR

METAL HOOKS, CLIPS AND EYES

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(*Continued on page 2*)

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(*Continued from page 1*)

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Indian Standard
SPECIFICATION FOR
METAL HOOKS, CLIPS AND EYES

0. FOREWORD

0.1 This Indian Standard was adopted by the Indian Standards Institution on 30 March 1967, after the draft finalized by the Fasteners for Consumer Goods Sectional Committee had been approved by the Consumer Products Division Council.

0.2 Various shapes and designs of hooks, clips and eyes are prevalent in the country. An effort has been made in this standard to cover them into three types.

0.3 This standard contains clauses which call for agreement between the purchaser and the supplier. These clauses are **6.1** and **9.1**.

0.4 For the purpose of deciding whether a particular requirement of this standard is complied with, the final value, observed or calculated, expressing the result of a test, shall be rounded off in accordance with IS : 2-1960*. The number of significant places retained in the rounded off value should be the same as that of the specified value in this standard.

1. SCOPE

1.1 This standard covers the requirements of metal hooks, clips and eyes.

2. TYPES

2.1 The hooks, clips and eyes shall be of the following types:

Type 1 Trouser type consisting of hook and clip

Type 2 General type consisting of hook and eye

a) Tent

b) Universal

c) Garment

Type 3 Strap type consisting of hook only

*Rules for rounding off numerical values (*revised*).

3. MATERIALS

3.1 The following materials are recommended for the manufacture of hooks, clips and eyes:

| | |
|-------------------|--|
| For Types 1 and 3 | Mild steel sheet, cold rolled or brass sheet |
| For Type 2 | Mild steel wire or brass wire |

4. SHAPES AND DIMENSIONS

4.1 The shapes and dimensions of different sizes shall be as given in Fig. 1 to 3.

5. MANUFACTURE, WORKMANSHIP AND FINISH

5.1 Hooks and clips of Types 1 and 3 shall be stamped and pressed and those of Type 2 shall be formed to shape.

5.2 These shall be free from sharp edges, cracks, dents, wrinkles, spots, burrs, blemishes and other surface defects.

5.3 The hooks, clips and eyes, if made from mild steel, shall be nickel-plated or tinned. The minimum thickness of nickel and tin coating shall be 0.000 4 mm and 0.000 6 mm respectively.

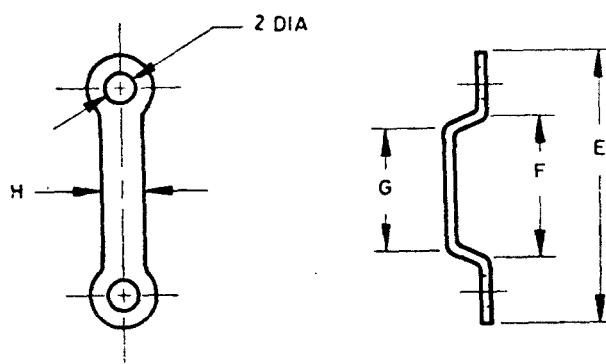
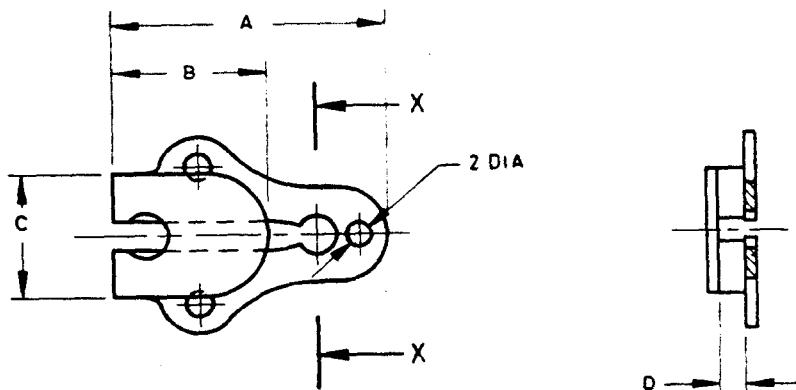
6. SAMPLING

6.1 Sampling and acceptance criteria for metal hooks, clips and eyes shall be as agreed to between the purchaser and the supplier. A recommended scheme for the same is given in Appendix A.

7. TEST

7.1 **Flexibility Test** — The hook shall be clamped in a suitable vice, such that the hook portion protrudes downwards. The weight, as given below against each type, shall be hanged through a chord. The hook shall not show any sign of damage or permanent set after the completion of the test.

| Type | Weight kg |
|--------|--------------|
| Type 1 | 10 |
| Type 2 | |
| a) | 7 |
| b) | 5 |
| c) | 3 |
| Type 3 | 7 |

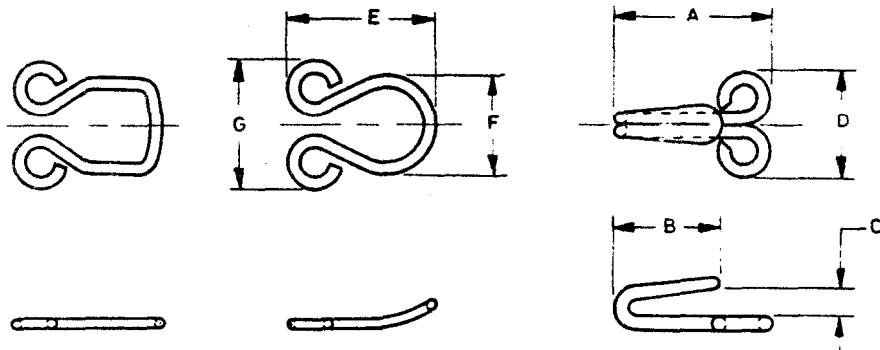


| | <i>A</i> | <i>B</i> | <i>C</i> | <i>D</i> | <i>E</i> | <i>F</i> | <i>G</i> | <i>H</i> | <i>Sheet Thickness</i> |
|---------------|----------|----------|----------|----------|----------|----------|----------|----------|------------------------|
| Size 1 | 23 | 16 | 9 | 2 | 22 | 13 | 11 | 3 | 0.56 |
| Size 2 | 23 | 18 | 12 | 2 | 31 | 17 | 15 | 4 | 0.56 |

All dimensions in millimetres.

Dimensions are nominal

FIG. 1 TROUSER TYPE, HOOK AND CLIP

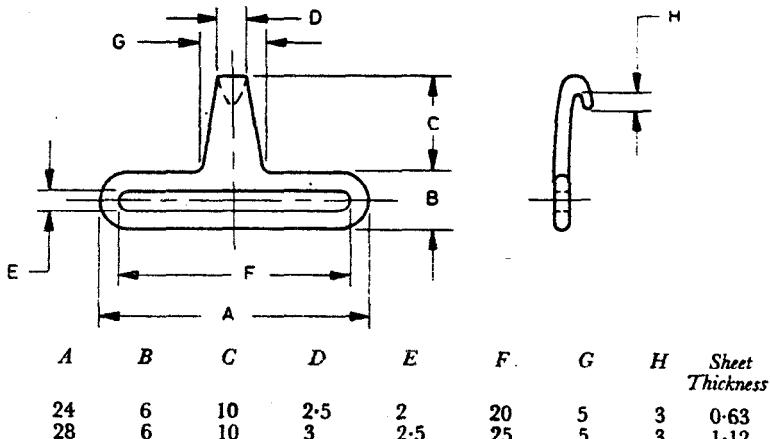


| Type | Eye | | | | | Hook | | | Wire Thickness |
|------|------|------|-----|----|-----|------|-----|------|----------------|
| | A | B | C | D | E | F | G | | |
| 2(a) | 33 | 28.5 | 5 | 20 | 25 | 14 | 20 | 3.15 | |
| 2(b) | 17 | 12 | 4 | 12 | 13 | 8 | 12 | 1.40 | |
| 2(c) | 10.3 | 7.5 | 1.3 | 8 | 7.6 | 5.3 | 7.6 | 0.80 | |
| | 12.5 | 9 | 1.6 | 10 | 9 | 6.5 | 9.0 | 1.12 | |
| | 13.5 | 10 | 1.6 | 10 | 9 | 6.5 | 9.0 | 1.25 | |

All dimensions in millimetres.

Dimensions are nominal

FIG. 2 GENERAL TYPE HOOK AND EYE



| | A | B | C | D | E | F | G | H | Sheet Thickness |
|--------|----|---|----|-----|-----|----|---|---|-----------------|
| Size 1 | 24 | 6 | 10 | 2.5 | 2 | 20 | 5 | 3 | 0.63 |
| Size 2 | 28 | 6 | 10 | 3 | 2.5 | 25 | 5 | 3 | 1.12 |

All dimensions in millimetres.

Dimensions are nominal

FIG. 3 STRAP TYPE HOOK WITHOUT EYE

8. MARKING

8.1 Each packet of hooks, clips and eyes shall be clearly and indelibly marked with the manufacturer's name, initials or trade-mark.

8.1.1 Each packet of hooks, clips and eyes may also be marked with the ISI Certification Mark.

NOTE — The use of the ISI Certification Mark is governed by the provisions of the Indian Standards Institution (Certification Marks) Act and the Rules and Regulations made thereunder. The ISI Mark on products covered by an Indian Standard conveys the assurance that they have been produced to comply with the requirements of that standard under a well-defined system of inspection, testing and quality control which is devised and supervised by ISI and operated by the producer. ISI marked products are also continuously checked by ISI for conformity to that standard as a further safeguard. Details of conditions under which a licence for the use of the ISI Certification Mark may be granted to manufacturers or processors, may be obtained from the Indian Standards Institution.

9. PACKING

9.1 The hooks, clips and eyes shall be packed as agreed to between the purchaser and the supplier.

A P P E N D I X A

(Clause 6.1)

SAMPLING SCHEME AND CRITERIA FOR CONFORMITY FOR METAL HOOKS, CLIPS AND EYES

A-1. SCALE OF SAMPLING

A-1.1 Lot — In any consignment all the hooks, clips and eyes of the same type, size, shape and manufactured from the same material under similar conditions of manufacture shall be grouped together to constitute a lot.

A-1.2 For ascertaining the conformity to the requirements of this standard, sample of hooks, clips and eyes shall be selected and tested separately for each lot.

A-1.3 The number of hooks, clips and eyes to be selected at random from a lot shall depend upon the size of the lot and shall be in accordance with col 1 and 2 of Table 1.

A-1.3.1 The hooks, clips and eyes in the sample shall be selected at random from the lot and, in order to ensure the randomness of selection, random number tables may be used. As a first step, a suitable number of

TABLE 1 SAMPLE SIZE AND CRITERIA FOR CONFORMITY
(Clause A-1.3)

| LOT SIZE (1) | SAMPLE SIZE (2) | PERMISSIBLE NUMBER OF DEFECTIVES (3) |
|------------------|--------------------|---|
| Up to 300 | 20 | 1 |
| 301 „ 500 | 32 | 2 |
| 501 „ 1 000 | 50 | 3 |
| 1 001 „ 3 000 | 80 | 5 |
| 3 001 „ 10 000 | 125 | 7 |
| 10 001 and above | 200 | 10 |

packets (not less than 10 percent of the total number in the lot subject to a minimum of 5) shall be chosen at random. From each of the packets so chosen, an approximately equal number of hooks, clips and eyes shall be picked up at random so as to obtain the required number of hooks, clips and eyes for the sample.

A-2. NUMBER OF TESTS AND CRITERIA FOR CONFORMITY

A-2.1 The hooks, clips and eyes selected in accordance with **A-1.3.1** shall be examined for shape, dimensions, workmanship and finish and tested in accordance with **7.1**. The lot shall be considered as conforming to the requirements of the standard if the number of hooks, clips and eyes failing in any one or more of the requirements does not exceed the permissible number given in col 3 of Table 1.

INTERNATIONAL SYSTEM OF UNITS (SI UNITS)

Base Units

| Quantity | Unit | Symbol |
|---------------------------|----------|--------|
| Length | metre | m |
| Mass | kilogram | kg |
| Time | second | s |
| Electric current | ampere | A |
| Thermodynamic temperature | kelvin | K |
| Luminous intensity | candela | cd |
| Amount of substance | mole | mol |

Supplementary Units

| Quantity | Unit | Symbol |
|-------------|-----------|--------|
| Plane angle | radian | rad |
| Solid angle | steradian | sr |

Derived Units

| Quantity | Unit | Symbol | Conversion |
|----------------------|---------|--------|---------------------------------|
| Force | newton | N | 1 N = 1 kg.1 m.s ⁻² |
| Energy | joule | J | 1 J = 1 N.m |
| Power | watt | W | 1 W = 1 J/s |
| Flux | weber | Wb | 1 Wb = 1 V.s |
| Flux density | tesla | T | 1 T = 1 Wb/m ² |
| Frequency | hertz | Hz | 1 Hz = 1 c/s (s ⁻¹) |
| Electric conductance | siemens | S | 1 S = 1 A/V |
| Pressure, stress | pascal | Pa | 1 Pa = 1 N/m ² |

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